

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A primary lithium battery comprising:  
an anode including a lithium-containing anode active material;  
a solid cathode including a current collector including an aluminum alloy and a cathode active material including a manganese dioxide, a CF<sub>x</sub> iron disulfide, or a vanadate in contact with the current collector; and  
a separator between the anode and the cathode,  
wherein the aluminum alloy is a 6000 series aluminum alloy and includes 0.04-0.4% by weight of chromium, 0.01-6.8% by weight of copper, 0.1-7% by weight of magnesium, 0.15% or less by weight of manganese, and 0.4-0.8% by weight of silicon.
2. (Original) The battery of claim 1, wherein the lithium-containing anode active material is lithium or a lithium alloy.
3. (Currently Amended) The battery of claim 1, wherein the aluminum alloy includes 0.15-0.4% by weight of copper, 0.7% or less by weight of iron, 0.8-[[1.2]]0.15% by weight of manganese, 0.1% or less by weight of titanium, and 0.25% or less by weight of zinc.
- 4-14. (Cancelled).
15. (Original) The battery of claim 1, further comprising a nonaqueous electrolyte in contact with the anode, the cathode, and the separator.

16. (Original) The battery of claim 15, wherein the nonaqueous electrolyte includes an organic solvent.

17. (Original) The battery of claim 15, wherein the nonaqueous electrolyte includes a perchlorate salt.

18. (Cancelled).

19. (Original) The battery of claim 1, wherein the current collector is an expanded metal grid.

20. (Original) The battery of claim 19, wherein the current collector has a yield strength of at least 2.0 lb/in.

21. (Original) The battery of claim 19, wherein the current collector has a yield strength of at least 5 lb/in.

22. (Original) The battery of claim 19, wherein the current collector has a tensile strength of at least 5 lb/in.

23. (Original) The battery of claim 19, wherein the current collector has a tensile strength of at least 7 lb/in.

24. (Original) The battery of claim 19, wherein the current collector has a yield strength of at least 2.0 lb/in and a tensile strength of at least 5 lb/in.

25. (Cancelled).

26. (Currently Amended) A primary lithium battery comprising:

an anode including a lithium-containing anode active material;

a solid cathode including a current collector including an aluminum alloy and a cathode active material selected from the group consisting of metal oxides and metal halides in contact with the current collector, wherein the current collector has a resistivity of less than 100 mΩ/cm; and

a separator between the anode and the cathode,

wherein the aluminum alloy is a 6000 series aluminum alloy and includes 0.04-0.4% by weight of chromium, 0.01-6.8% by weight of copper, 0.1-7% by weight of magnesium, 0.15% or less by weight of manganese, and 0.4-0.8% by weight of silicon

27. (Currently Amended) A primary lithium battery comprising:

an anode including a lithium-containing anode active material;

a solid cathode including a current collector including an aluminum alloy and a cathode active material selected from the group consisting of metal oxides and metal halides in contact with the current collector, wherein the current collector has a resistivity of less than 10 mΩ/cm; and

a separator between the anode and the cathode,

wherein the aluminum alloy is a 6000 series aluminum alloy and includes 0.04-0.4% by weight of chromium, 0.01-6.8% by weight of copper, 0.1-7% by weight of magnesium, 0.15% or less by weight of manganese, and 0.4-0.8% by weight of silicon.

28. (Previously Presented) A primary lithium battery comprising:

an anode including a lithium-containing anode active material;

a solid cathode including a current collector including an aluminum alloy and a cathode active material including a manganese dioxide in contact with the current collector;

a separator between the anode and the cathode; and

a non-aqueous electrolyte including an organic solvent and a perchlorate salt in contact with the anode, the cathode and the separator,

wherein the aluminum alloy is a 6000 series aluminum alloy and includes 0.04-0.4% by weight of chromium, 0.01-6.8% by weight of copper, 0.1-7% by weight of magnesium, 0.15% or less by weight of manganese, and 0.4-0.8% by weight of silicon.

29-31. (Cancelled).

32. (Original) The battery of claim 28, wherein the current collector is an expanded metal grid.

33. (Original) The battery of claim 32, wherein the current collector has a yield strength of at least 2.0 lb/in.

34. (Original) The battery of claim 32, wherein the current collector has a yield strength of at least 5 lb/in.

35. (Original) The battery of claim 32, wherein the current collector has a tensile strength of at least 5 lb/in.

36. (Original) The battery of claim 32, wherein the current collector has a tensile strength of at least 7 lb/in.

37-55. (Cancelled).

56. (Currently Amended) A primary lithium battery comprising:  
an anode including a lithium-containing anode active material; and  
a cathode including a current collector including a 6061 aluminum alloy and a cathode active material selected from the group consisting of metal oxides and metal halides in contact with the current collector.

57. (Original) The battery of claim 56, wherein the cathode active material is a solid.

58. (Original) The battery of claim 56, wherein the cathode active material is a liquid.

59. (Original) The battery of claim 56, wherein the cathode active material includes SO<sub>2</sub> or SOCl<sub>2</sub>.

60. (Original) The battery of claim 56, wherein the current collector includes a pulled grid.

61. (Original) The battery of claim 56, wherein the current collector includes a leveled grid.

62. (Currently Amended) A method of making a primary lithium battery comprising assembling a solid cathode including a manganese dioxide, a CF<sub>x</sub>, iron disulfide, or a vanadate and a current collector including an aluminum alloy, an anode including lithium, and a separator in a housing,

wherein the aluminum alloy is a 6000 series aluminum alloy and includes 0.04-0.4% by weight of chromium, 0.01-6.8% by weight of copper, 0.1-7% by weight of magnesium, 0.15% or less by weight of manganese, and 0.4-0.8% by weight of silicon.

63-64. (Cancelled).

65. (Previously Presented) The method of claim 62, wherein the aluminum alloy includes 0.15-0.4% by weight of copper, 0.7% or less by weight of iron, 0.8-1.2% by weight of manganese, 0.15% or less by weight of titanium, and 0.25% or less by weight of zinc.

66. (Original) The method of claim 62, wherein the current collector is an expanded metal grid.

67. (Cancelled).

68. (Original) The method of claim 62, further comprising placing a nonaqueous electrolyte in the housing.

69. (Original) The method of claim 68, wherein the nonaqueous electrolyte includes an organic solvent.

70. (Original) The method of claim 68, wherein the nonaqueous electrolyte includes a perchlorate salt.

71-76. (Cancelled).

77. (Cancelled).

78. (Previously Presented) The method of claim 26, wherein the current collector is a metal grid and a portion of the metal grid consists of the aluminum alloy.

79. (Previously Presented) The method of claim 27, wherein the current collector is a metal grid and a portion of the metal grid consists of the aluminum alloy.

80-82. (Cancelled).

83. (New) A primary lithium battery comprising:  
an anode including a lithium-containing anode active material;  
a solid cathode including a current collector including an aluminum alloy and a cathode active material selected from the group consisting of metal oxides and metal halides in contact with the current collector; and  
a separator between the anode and the cathode,  
wherein the aluminum alloy is a 6000 series aluminum alloy and includes 0.04-0.4% by weight of chromium, 0.01-6.8% by weight of copper, 0.1-7% by weight of magnesium, 0.15% or less by weight of manganese, and 0.4-0.8% by weight of silicon.

84. (New) A method of making a primary lithium battery comprising assembling a solid cathode including a cathode active material including a manganese dioxide, a  $\text{CF}_x$ , iron disulfide, or a vanadate and a current collector including an aluminum alloy, an anode including lithium, and a separator in a housing,

Applicant : Fred Berkowitz et al.  
Serial No. : 10/719,025  
Filed : November 24, 2003  
Page : 9 of 10

Attorney's Docket No.: 08935-290001 / M-5022

wherein the aluminum alloy is a 6000 series aluminum alloy and includes 0.04-0.4% by weight of chromium, 0.01-6.8% by weight of copper, 0.1-7% by weight of magnesium, 0.15% or less by weight of manganese, and 0.4-0.8% by weight of silicon.